## **CLAIMS APPENDIX**

| 1  | 11. A static mixer comprising:   |
|----|--|
| 2  | precision cast static mixer elements (1) arranged along a central axis (10), each                    |
| 3  | precision cast static mixer element having a circumferential reinforcement region (4);               |
| 4  | intermediate elements (2) abutting the circumferential reinforcement region (4)                      |
| 5  | and forming in combination with the precision cast static mixer elements a static mixer body of a    |
| 6  | preselected length with a periphery defined by the reinforcement region and the intermediate         |
| 7  | elements; and  |
| 8  | joints between the reinforcement region (4) and the intermediate elements (2)                        |
| 9  | defining first and second continuous joint surfaces (40a, 40b and 20a, 20b) and mutually defining    |
| 10 | a seal formed between the first and second continuous joint surfaces between the reinforcement       |
| 11 | regions (4) and the intermediate elements (2);   |
| 12 | a first continuous joint surface defining at least one cut-out having an upwardly                    |
| 13 | extending cavity;  |
| 14 | a second continuous joint surface supporting a protrusion for extending into the at                  |
| 15 | least one cut-out of the first continuous joint surface for positioning the reinforcement region and |
| 16 | the intermediate elements at the seal of the first and second continuous joint surfaces with         |
| 17 | respect to each other;   |
| 18 | the first continuous joint surface defining the at least one cut-out having an                       |
| 19 | upwardly extending cavity of sufficient dimension for receiving the protrusion supported on the      |
| 20 | second continuous surface without obstruction within the cavity while permitting the first and       |
| 21 | second continuous joint surfaces to define the seal,   |
| 22 | whereby the first continuous joint surface defines an unobstructed planar surface                    |
| 23 | to enable machining access for adjusting the length of the static mixer.                             |
| 1  | 12. The static mixer of claim 11 wherein:  |
| 2  | the reinforcement regions (4) of the precision cast static mixer elements (1) are                    |
| 3  | ring-shaped;   |
|    |  |

| 4  | the reinforcement regions (4) have the first continuous joint surface defining cut-               |
|----|---|
| 5  | outs (41, 41', 42, 42') configured in the reinforcement regions (4); and                          |
| 5  | the second continuous joint surface supports the protrusion (21, 21', 22, 22', 23)                |
| 7  | from the continuous joint locations (20a, 20b) of at least one intermediate element (2), the      |
| 3  | projecting part having a shape complementary to a shape of the cut-outs.                          |
| 1  | 13. The static mixer of claim 12 wherein:   |
| 2  | at least some of the protrusions are separate parts (23) fitted into cut-outs (25) in             |
| 3  | the intermediate elements (2).  |
| 1  | 14. The static mixer of claim 11 further including:   |
| 2  | a longitudinally slit cylinder (5) of resiliently elastic sheet metal lamina holding              |
| 3  | the precision cast static mixer elements (1) at the reinforcement region (4) and the intermediate |
| 1  | element (2) together.   |
|    |   |
| i. | 15. The static mixer of claim 11 and wherein:   |
| 2  | the precision cast static mixer elements (1) each comprise a gridwork (3) of webs                 |
| 3  | (31) which are arranged in layers oriented parallel to the central axis (10) with the webs of     |
| 1  | adjacent layers crossing one another.   |
| l  | 16. The static mixer of claim 15 and wherein:   |
| 2  | the webs of adjacent layers cross one another and enclose angles between 10° and                  |
| 3  | 70°.  |
| l  | 17. The static mixer of claim 11 and wherein:   |
| 2  | the precision cast static mixer elements (1) are manufactured from the group                      |
| 3  | consisting of a metallic alloy, a ceramic material, and a plastic.                                |
| l  | 18. The static mixer of claim 15 and wherein:   |
| 2  | the gridwork (3) of webs (31) is co-cast with the reinforcement regions (4).                      |
| l  | 19. The static mixer of claim 12 wherein:   |

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first cut-outs (41, 41') are configured on one side of the reinforcement regions (4); and
second cut-outs (42, 42') are configured on the other side of the reinforcement regions (4) and displaced 90° from the first cut-outs (41, 41').

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## SUPPLEMENTAL CLAIMS APPENDIX CONTAINING MATERIAL REJECTED AS NEW MATTER

(Rejected new matter appears in underline format and is not now contained in the appealed claims)

| 1  | 11. A static mixer comprising:  |
|----|---|
| 2  | precision cast static mixer elements (1) arranged along a central axis (10), each                 |
| 3  | precision cast static mixer element having a circumferential reinforcement region (4);            |
| 4  | intermediate elements (2) abutting the circumferential reinforcement region (4)                   |
| 5  | and forming in combination with the precision cast static mixer elements a static mixer body of a |
| 6  | preselected length with a periphery defined by the reinforcement region and the intermediate      |
| 7  | elements; and   |
| 8  | joints between the reinforcement region (4) and the intermediate elements (2)                     |
| 9  | defining first and second continuous joint surfaces (40a, 40b and 20a, 20b) and mutually defining |
| 10 | a seal formed between the first and second continuous joint surfaces between the reinforcement    |
| 11 | regions (4) and the intermediate elements (2);  |
| 12 | a first continuous entirely planar, circumferential joint surface defining at least               |
| 13 | one cut-out having an upwardly extending cavity;  |
| 14 | a second continuous entirely planar, circumferential joint surface supporting a                   |
| 15 | protrusion for extending into the at least one cut-out of the first continuous entirely planar,   |
| 16 | circumferential joint surface for positioning the reinforcement region and the intermediate       |
| 17 | elements at the seal of the first and second continuous entirely planar, circumferential joint    |
| 18 | surfaces with respect to each other;  |
| 19 | the first continuous entirely planar, circumferential joint surface defining the at               |
| 20 | least one cut-out having an upwardly extending cavity of sufficient dimension for receiving the   |
| 21 | protrusion supported on the second continuous entirely planar, circumferential surface without    |
| 22 | obstruction within the cavity while permitting the first and second continuous entirely planar,   |
| 23 | circumferential joint surfaces to define the seal,  |

24 whereby the first continuous entirely planar, circumferential joint surface defines an unobstructed planar surface to enable machining access for adjusting the length of the static 25 26 mixer. 12. 1 The static mixer of claim 11 wherein: 2 the reinforcement regions (4) of the precision cast static mixer elements (1) are 3 ring-shaped; 4 the reinforcement regions (4) have the first entirely planar, circumferential continuous joint surface defining cut-outs (41, 41', 42, 42') configured in the reinforcement 5 6 regions (4); and the second continuous entirely planar, circumferential joint surface supporting the 7 protrusion (21, 21', 22, 22', 23) from the continuous joint locations (20a, 20b) of at least one 8 intermediate element (2), the projecting part having a shape complementary to a shape of the cut-9 10 outs. 1 13. The static mixer of claim 12 wherein: at least some of the protrusions are separate parts (23) fitted into cut-outs (25) in 2 3 the intermediate elements (2). 1 14. The static mixer of claim 11 further including: a longitudinally slit cylinder (5) of resiliently elastic sheet metal lamina holding 2 the precision cast static mixer elements (1) at the reinforcement region (4) and the intermediate 3 4 element (2) together. 1 15. The static mixer of claim 11 and wherein: the precision cast static mixer elements (1) each comprise a gridwork (3) of webs 2 (31) which are arranged in layers oriented parallel to the central axis (10) with the webs of 3 adjacent layers crossing one another. 4 1 The static mixer of claim 15 and wherein: 16.

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| 2 | the webs of adjacent layers cross one another and enclose angles between 10° and      |
|---|---|
| 3 | 70°.  |
| 1 | 17. The static mixer of claim 11 and wherein:   |
| 2 | the precision cast static mixer elements (1) are manufactured from the group          |
| 3 | consisting of a metallic alloy, a ceramic material, and a plastic.                    |
| 1 | 18. The static mixer of claim 15 and wherein:   |
| 2 | the gridwork (3) of webs (31) is co-cast with the reinforcement regions (4).          |
| 1 | 19. The static mixer of claim 12 wherein:   |
| 2 | first cut-outs (41, 41') are configured on one side of the reinforcement regions (4); |
| 3 | and   |
| 4 | second cut-outs (42, 42') are configured on the other side of the reinforcement       |
| 5 | regions (4) and displaced 90° from the first cut-outs (41, 41').                      |

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